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(22)Date of filing : 29.07.1998 (72)Inventor : IMOTO HIROSHI
YAMADA SHINICHIRO

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(54) NEGATIVE ELECTRODE MATERIAL, AND NONAQUEOUS ELECTROLYTE SECONDARY BATTERY USING THE SAME

(57)Abstract:

PROBLEM TO BE SOLVED: To improve the Li dope/de-doping capacity, and to increase the capacity of a secondary battery by providing a compound containing at least one of Si, Ge and Sn, and N and O.

SOLUTION: A compound to be used for a negative electrode material is expressed by a general formula of $M_xN_yO_z$. M is at least one element from among Si, Ge and Sn, and inequalities $1.4 < x < 2.1$, $1.4 < y < 2$, $0.9 < z < 1.6$ are satisfied. An embodiment of the compound includes Si_2N_2O , Ge_2N_2O , and Sn_2N_2O . Alkaline metal or alkaline-earth metal such as Li, Na, K, Mg, Ca and Al may be added to this compound. For example, a part of Si can be replaced as in Al like $Si_{2-x}Al_xN_{2-x}O_{1+x}$. A part of tetravalent element is replaced by other monovalent to trivalent elements to improve conductivity.

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